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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/748,431 | .12/26/2000 | Benjamin Thomas Smith | GOOGLE-7 (GP-015-91-US) | 4462 |

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|---|---|
| 7590          12/19/2003 | EXAMINER |
| Straub & Pokotylo<br>Suite 83, Bldg. 6<br>1 Bethany Road<br>Hazlet, NJ  07730 | MAHMOUDI, HASSAN . |

| ART UNIT | PAPER NUMBER |
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| 2175 | 4 |

DATE MAILED: 12/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**.      2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) _1-32_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-32_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____ .

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

DOV POPOVICI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

**Attachment(s)**

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .

4)☐ Interview Summary (PTO-413) Paper No(s). _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: .

# DETAILED ACTION

## *Specification*

1. The arrangement of the disclosed application does not conform with 37 CFR 1.77(b).

   Section heading are underlined throughout the disclosed specification. Section headings

   should not be <u>underlined</u> and/or **boldfaced**. Appropriate corrections are required according

   to the guidelines provided below:

2. The following guidelines illustrate the preferred layout for the specification of a utility

   application. These guidelines are suggested for the applicant's use.

### Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include
the following sections in order. Each of the lettered items should appear in upper case, without
underlining or bold type, as a section heading. If no text follows the section heading, the phrase
"Not Applicable" should follow the section heading:

   (a) TITLE OF THE INVENTION.
   (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
   (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR
         DEVELOPMENT.
   (d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A
         COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program
         listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables
         having more than 50 pages of text are permitted to be submitted on compact
         discs.) or
         REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a).
         "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
   (e) BACKGROUND OF THE INVENTION.
         (1) Field of the Invention.
         (2) Description of Related Art including information disclosed under 37 CFR 1.97
         and 1.98.

(f) BRIEF SUMMARY OF THE INVENTION.

(g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).

(h) DETAILED DESCRIPTION OF THE INVENTION.

(i) CLAIM OR CLAIMS (commencing on a separate sheet).

(j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).

(k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence
Listing" is required on paper if the application discloses a nucleotide or amino
acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence
Listing" is not submitted as an electronic document on compact disc).

## *Claim Rejections - 35 USC § 103*

3.  The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness

rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
such that the subject matter as a whole would have been obvious at the time the invention was made to a person
having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
manner in which the invention was made.

4.  Claims 1-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cappi (U.S. Pub.

No. 2002/0038308) in view of Gilai et al (U.S. Patent No. 6,256,630.)

As to claim 1, Cappi teaches a method of providing search results (see Abstract) in

response to an ambiguous search query (see paragraph 48), the ambiguous search query

consisting of a sequence of ambiguous information components (see paragraph 37):

receiving information from a user (see Abstract, and see paragraph 9);

obtaining mapping information that maps the ambiguous information components (see

paragraphs 37, 46, and 51) to less ambiguous information components (see paragraphs 57

and 62);

using the mapping information to translate the sequence of ambiguous information

components into one or more corresponding sequences of less ambiguous information

components (see paragraphs 62, 64, and 69);

providing one or more of the sequences of less ambiguous information as an input to a

search engine (see paragraphs 48, 111, and 141, and see figure 12);

obtaining search results from the search engine (see paragraph 140, where "obtaining

search results" is read on "assembling the results"); and

presenting the search results to the user (see paragraph 147.)

Cappi does not teach: receiving a sequence of ambiguous information components from

a user.

Gilai et al teaches a word containing database accessing system and method (see

Abstract), in which he teaches receiving a sequence of ambiguous information components

from a user (see Abstract, and see column 3, line 1 through column 4, line 21.)

Therefore, it would have been obvious to a use having ordinary skill in the art at the time

the invention was made to have modified Cappi to include receiving a sequence of

ambiguous information components from a user.

It would have been obvious to a person having ordinary skill in the art at the time the

invention was made to have modified Cappi by the teaching of Gilai et al, because receiving

a sequence of ambiguous information components from a user, would enable the user to enter

ad-hoc and ambiguous, and possibly erroneous data (words, numbers, and phrases), without

worrying about the correct spelling or the relations between the entered words and have the

system display best matching results based on the entered information, as taught by Gilai et

al (see column 4, lines 22-33.)

As to claims 2, 17, 22, and 28, Cappi as modified teaches wherein the mapping

information is based on the configuration of a standard telephone keypad (see Gilai et al,

figures 9 and 13, and see column 6, lines 52-60, and column 10, lines 17-31.)

As to claim 3, Cappi as modified teaches wherein the ambiguous information

components comprise numbers and the less ambiguous information components comprise

letters (see Gilai et al, column 10, lines 3-31, and see figure 13. Since each number can

represent up to three letters, it is obvious that numbers represent more ambiguous entries than

letters.)

As to claim 4, Cappi as modified teaches wherein each of the ambiguous information

components comprises a single press of a key and the less ambiguous information comprises

letters that correspond to the key (see Gilai et al, column 17, line 49 through column 18, line

9.)

As to claim 5, Cappi as modified teaches wherein the ambiguous information

components comprise phonemes (see Gilai et al, column 6, lines 4-14, and see column 18,

lines 53-65.)

As to claim 6, <u>Cappi</u> as modified teaches wherein the less ambiguous information

components comprise alphanumeric information (see <u>Gilai et al</u>, column 19, line 31 through

column 20, line 17.)


As to claim 7, <u>Cappi</u> as modified teaches wherein the ambiguous information

components comprise visual information (see <u>Cappi</u>, paragraph 35.)


As to claim 8, <u>Cappi</u> as modified teaches wherein the act of using comprises using the

mapping information in combination with a lexicon to translate the sequence of ambiguous

information components into one or more corresponding sequences of less ambiguous

information components (see <u>Cappi</u>, Abstract, and see paragraphs 37 and 46, where

"lexicon" is read on "dictionary".)


As to claim 9, <u>Cappi</u> as modified teaches wherein the lexicon is a dictionary (see <u>Cappi</u>,

paragraphs 37 and 46.)


As to claim 10, <u>Cappi</u> as modified teaches wherein the lexicon is a list of sequences of

less ambiguous information components that previously have been processed by the search

engine (see <u>Cappi</u>, paragraph 63.)


As to claims 11, 20, 23 25, and 27, <u>Cappi</u> as modified teaches wherein the act of

providing comprises providing at least two sequences of less ambiguous information

components to the search engine using a logical "OR" operation (see Cappi, paragraph 34,

where "logical integration" is taught.)

As to claim 12, Cappi as modified teaches wherein the act of providing comprises:

determining a subset of the translated sequences of less ambiguous information

components (see Cappi, paragraphs 62, 64, and 69); and

providing the subset of translated sequences of less ambiguous information components

as an input to a search engine (see Cappi, paragraphs 48, 111, and 141, and see figure 12.)

As to claim 13, Cappi as modified teaches wherein the act of determining comprises

comparing the translated sequences of less ambiguous information components against a

lexicon (see Cappi, paragraph 59.)

As to claim 14, Cappi as modified teaches wherein the act of determining comprises

comparing the translated sequences of less ambiguous information components against a

search query log (see Gilai et al, column 20, lines 64-67.)

As to claim 15, Cappi as modified teaches wherein the act of determining comprises

using statistical information about the co-occurrence of the less ambiguous information

components within the sequence (see Gilai et al, column 22, lines 39-44.)

As to claim 16, <u>Cappi</u> teaches a method of providing search results (see Abstract) in response to an ambiguous search query (see paragraph 48), comprising:

receiving information from a user (see Abstract, and see paragraph 9);

obtaining mapping information that maps the information components (see paragraphs 37, 46, and 51) to other information components corresponding to the same key press (see paragraphs 57 and 62);

using the mapping information to determine other sequences of information components (see paragraphs 62, 64, and 69);

providing one or more of the received sequence and the other sequences as an input to a search engine (see paragraphs 48, 111, and 141, and see figure 12);

obtaining search results from the search engine (see paragraph 140, where "obtaining search results" is read on "assembling the results"); and

presenting the search results to the user (see paragraph 147.)

<u>Cappi</u> does not teach:   receiving a sequence of ambiguous information components from a user, each information component corresponding to a key press.

<u>Gilai et al</u> teaches a word containing database accessing system and method (see Abstract), in which he teaches receiving a sequence of ambiguous information components from a user (see Abstract, and see column 3, line 1 through column 4, line 21), each information component corresponding to a key press (see column 12, lines 50-55, and see column 17, line 65 through column 18, line 6.)

Therefore, it would have been obvious to a use having ordinary skill in the art at the time the invention was made to have modified <u>Cappi</u> to include receiving a sequence of

ambiguous information components from a user, each information component corresponding to a key press.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Cappi by the teaching of Gilai et al, because receiving a sequence of ambiguous information components from a user, each information component corresponding to a key press, would enable the user to enter ad-hoc and ambiguous, and possibly erroneous data (words, numbers, and phrases), without worrying about the correct spelling or the relations between the entered words and have the system display best matching results based on the entered information, as taught by Gilai et al (see column 4, lines 22-33.)

As to claim 18, Cappi as modified teaches wherein the received information components comprise numbers and the other information components comprise letters (see Gilai et al, column 10, lines 3-31, and see figure 13.)

As to claim 19, Cappi as modified teaches wherein both the received and other information components comprise letters (see Gilai et al, column 17, lines 59-65.)

As to claim 21, Cappi teaches a method of providing search results (see Abstract) in response to an ambiguous search query (see paragraph 48), comprising:

providing at least one of the letter strings as a search query to a search engine (see paragraphs 48, 111, and 141, and see figure 12);

obtaining search results from the search engine in response to the search query (see

paragraph 140, where "obtaining search results" is read on "assembling the results"); and

presenting the search results to the user (see paragraph 147.)

Cappi does not teach: receiving a string of numbers; and translating the string of

numbers into a plurality of letter strings based on mapping information.

Gilai et al teaches a word containing database accessing system and method (see

Abstract), in which he teaches receiving a string of numbers (see figure 9. It is inherent that

a telephone keypad is used to enter a string of numbers, and see column 17, line 62 through

column 18, line 9); and translating the string of numbers into a plurality of letter strings

based on mapping information (see column 10, lines 17-31.)

Therefore, it would have been obvious to a use having ordinary skill in the art at the time

the invention was made to have modified Cappi to include receiving a string of numbers; and

translating the string of numbers into a plurality of letter strings based on mapping

information.

It would have been obvious to a person having ordinary skill in the art at the time the

invention was made to have modified Cappi by the teaching of Gilai et al, because receiving

a string of numbers; and translating the string of numbers into a plurality of letter strings

based on mapping information , would enable the user to enter the desired input, whether

alphabetic or numeric, through a "reduced" numeric keypad, such as a standard telephone

keypad, as taught by Gilai et al (see column 6, lines 52-60, also see figures 9 and 13.)

As to claim 24, the applicant is directed to the remarks and discussions made in claim 21 above, where "receiving a number word" is read on <u>Gilai et al</u>'s teaching of "receiving a string of numbers".

As to claim 26, the applicant is directed to the remarks and discussions made in claims 1, 16, 21, and 24 above.

As to claim 29, <u>Cappi</u> teaches a method of providing search results (see Abstract) in response to an ambiguous search query (see paragraph 48) received from a client device (see paragraphs 9 and 36):

receiving at a server device  information components from a client device (see paragraph 36.)

For the remaining steps of this claim, the applicant is directed to the remarks and discussions made in claims 1, 16, 21, and 24 above.

As to claim 30, <u>Cappi</u> teaches a computer-readable medium (see figure 1) containing one or more instructions (see paragraphs 34 and 38) for providing search results (see Abstract) in response to an ambiguous search query, the ambiguous search query (see paragraph 48.)

For the remaining steps of this claim, the applicant is directed to the remarks and discussions made in claims 1, 16, 21, and 24 above.

As to claims 31 and 32, <u>Cappi</u> teaches an apparatus for providing search results in response to an ambiguous search query (see paragraph 48.)

For the remaining steps of this claim, the applicant is directed to the remarks and discussions made in claims 1, 16, 21, and 24 above.

*Conclusion*

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following patents are cited to further show the state of art with respect to methods and systems of searching with ambiguous search queries in general:

| Patent/Pub. No. | Issued to | Cited for teaching |
|---|---|---|
| US 2002/0021311 | Shechter et al. | Data entry using a reduced keypad. |
| US 2002/0059069 | Hsu et al. | Natural language search and query interface. |

6. Any inquiries concerning this communication or earlier communications from the examiner should be directed to Tony Mahmoudi whose telephone number is (703) 305-4887. The examiner can normally be reached on Mondays-Fridays from 08:00 am to 04:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dov Popovici, can be reached at (703) 305-3830.

tm

December 5, 2003

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